

Site Visit Report

Under the *European Union (Drinking Water) Regulations 2023*, the Environmental Protection Agency (EPA) is the supervisory authority in relation to Uisce Éireann and its role in the provision of public drinking water supplies. This audit was carried out to assess the performance of Uisce Éireann in providing clean and wholesome water to the public water supply named below.

The audit process is a sample of the performance of a water treatment plant and public water supply on a given date.

Water Supply Zone	
Name of Installation	Kilrossanty
Organisation	Uisce Éireann
Scheme Code	3100PUB1069
County	Waterford
Site Visit Reference No.	SV30266

Report Detail	
Issue Date	31/07/2024
Prepared By	Paul Buckley

Site Visit Detail			
Date Of Inspection	19/07/2024	Announced	Yes
Time In	10:30	Time Out	11:10
EPA Inspector(s)	Paul Buckley		
Additional Visitors			
Company Personnel	Uisce Éireann - Pat Duggan. Waterford City and County Council (working in partnership with Uisce Éireann) - Dave Whelan and James Power.		

> Summary of Key Findings

1. A chemical spill at Kilrossanty water treatment plant on 15/07/2024 resulted in approximately 1,000 litres of sodium hydroxide spilling on the ground in the area surrounding the borehole and subsequently infiltrating the borehole. This caused elevated pH and turbidity in the raw water which resulted in a plant shutdown. The audit confirmed that the spillage occurred due to an overflow of the sodium hydroxide day tank following a fault with the transfer pump between the bulk tank and the day tank.
2. The drinking water quality entering the Kilrossanty Public Water Supply was not impacted as the plant shut down based on the elevated turbidity. Uisce Éireann and Waterford City and County Council confirmed that tankering of treated water from the East Waterford Water Supply Scheme to the Kilrossanty Public Water Supply reservoir was ongoing at a rate of approximately 120 m³/day to ensure there are no interruptions to the supply.

> Introduction

The Kilrossanty Public Water Supply (PWS) supplies an average of 100 m³/day of water, serving a population of 359 people. The source of the supply is 1 No. Borehole that is located within the locked compound of the water treatment plant (WTP). Treatment consists of pH correction and chlorination.

The audit was undertaken in response to Uisce Éireann's notification to the EPA of a chemical spill at the plant which occurred on 15/07/2024.

> Supply Zones Areas Inspected

The inspection focused on the chemical storage facilities and the outlet pipe from the water treatment plant.



1. Incident Management

1.1

	Answer
Was the incident suitably alerted to the plant operators, escalated and managed in order to maintain water quality and protect public health?	Yes
Comment	
<p>1. Uisce Éireann notified the EPA and Inland Fisheries Ireland (IFI) on 16/07/2024 of a chemical spill which occurred at the Kilrossanty water treatment plant (WTP) on 15/07/2024. This resulted in approximately 1,000 litres of sodium hydroxide spilling from the day tank onto the unmade ground in the area surrounding the borehole at the WTP. The spillage caused elevated pH and turbidity levels in the raw water, resulting in the shutdown of the water treatment plant.</p> <p>2. <u>Cause of incident:</u></p> <ul style="list-style-type: none"> • Sodium Hydroxide is used in the drinking water treatment process for pH correction and is stored outside the plant in a 2 m3 double skinned bulk storage tank (BST). Sodium Hydroxide is pumped from the BST via underground pipework into a bunded day tank (200 litres) located inside the plant. • Operational staff checked the plant on the morning of Monday 15/07/2024 and the plant was operating satisfactorily. The BST and the chemical storage hut were not checked during the visit. • At approximately 12:30 on 15/07/2024 operational staff received a low level chemical tank alarm. At approximately 13:40, while on route to the plant, operational staff received a high turbidity alarm, and the plant subsequently automatically shut down based on high turbidity readings > 1 NTU. On inspection of the chemical storage hut a spillage was noted inside the hut on the floor adjacent to the day tank bund. Inspection of the exterior of the building showed evidence of a spillage on the unmade ground surrounding the chemical hut. The unmade ground is located in the zone of influence for the borehole. <p>3. <u>Action taken:</u></p> <ul style="list-style-type: none"> • Operational staff arrived at the water treatment plant at approximately 14:00 and, following investigation, powered off the actuated valve associated with the bulk tank, causing the valve to close. • Waterford City and County council notified Uisce Éireann of the spillage and noted the turbidity above 1 NTU and a pH reading of 14. Operational staff commenced pumping of the borehole in an effort to restore the turbidity and pH to the normal range. Water within the borehole was pumped out to roadside drainage in order to remove the Sodium Hydroxide from the borehole. The roadside drainage disperses across an adjoining field. • Uisce Éireann notified Inland Fisheries Ireland (IFI) and the EPA of the incident on 16/07/2024. The IFI conducted a visit to the site and were satisfied that there was no impact on any receiving waters in the area. <p>4. At the audit it was noted that treated water was being supplied to the Kilrossanty reservoir from the East Waterford Water Supply Scheme at a rate of 120 m3/day to ensure adequate supply for consumers on the network. Pumping from the borehole was still ongoing at the time of the audit.</p>	



2. Treatment Process Chemicals

2.1

	Answer
Are treatment process chemicals appropriately managed and stored?	No
Comment	
<p>1. The audit found that the spillage of Sodium Hydroxide occurred due to an issue with the actuated valve of the transfer pump on the pipeline between the bulk storage tank and the day tank which caused the day tank to overflow onto the ground in the area around the chemical hut. Investigations are ongoing between Uisce Éireann and the providers to determine the cause of the issue with the pump and what corrective actions should be put in place to prevent similar incidents occurring.</p> <p>2. There is a level sensor on the bulk storage tank which is dialed out via alarm to operational staff. There is no schedule of checks of chemical storage areas in the operational tasks assigned to caretakers.</p>	

Recommendations

Subject	Kilrossanty PWS Audit Recommendations 19/07/2024	Due Date	02/09/2024
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation(s) without delay.</p> <ol style="list-style-type: none">1. i) Submit the findings of the investigation into the cause of the incident and ii) put in place corrective actions to ensure a similar incident does not reoccur.2. Upgrade the sodium hydroxide storage tanks and associated pipework and valves so that they are located in a bunded area capable of containing at least 110% of the volume of chemicals stored therein. Refer to EPA Guidance document "<i>IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities</i>". <p>Actions required by Uisce Éireann</p> <p>During the audit, Uisce Éireann representatives were advised of the audit findings and that action must be taken by Uisce Éireann to address the issues raised.</p> <p>Uisce Éireann should submit a report to the EPA on or before 02/09/2024 detailing the actions taken and planned, with timescales, to close out the above recommendations.</p> <p>The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.</p>		